

**FROM THE DESK OF CHUCK BUDINGER, PG  
GEORGIA WATERSHED ALLIANCE  
1112 CENTER STREET  
ATLANTA, GA 30318**

October 20, 2005

**Councilmember Donna Frye  
Mission Bay Landfill Technical Advisory Committee, Chairperson  
City of San Diego, California**

**Re: Preliminary Comments to the Draft Environmental Site Assessment for the  
Mission Bay Landfill**

Dear Ms. Frye:

I must commend you on your leadership that resulted in this document as it has been presented to the Committee, and the public, for review. It is through the deliberative process and oversight activities of the Committee that has produced such an excellent report. This report, once all comments are reviewed and incorporated, will serve as a model for the remediation of this particular eye-sore and public health issue in the San Diego area. But, it was through your vision and forethought that brought this report into existence. Thank you.

My review of this report has been short and these comments serve as a preliminary evaluation of the contents and scope of this Draft Site Assessment Plan. This is due to the overall size and content of this report, but also due to another issue that has side-tracked me from the original intentions to review the report with respect to the environmental impacts and public health affects of the hazardous materials disposed of in this landfill.

As a result, I would like to ask the Committee for extra time to review the report in order to evaluate the Site Assessment more fully. The report is very comprehensive and well written, but there are some issues that I would like to have more time to spend evaluating.

The issue that has side-tracked me is the observation of a very serious oversight of the Committee, the public, and the consultant. This includes me during my time on the Committee. There has been no mention of pathogenic bacteria in this report or their impacts on the environment and public health. At the time that I served on the Committee, this was not an issue that seemed to be on anyone person's mind, especially with a landfill that was specifically known to be considered hazardous and later classified as such. However, as a result of the comprehensive scope and deliberate effort to characterize this site, there now appears to be a second-phase health risk associated with

this landfill. Now, due to the nature of the report and its thoroughness, we can look at all issues with a little more clarity.

Certain conditions of the landfill, the surrounding environment and hydrogeology, plus the new understanding that has emerged amongst research institutions and the EPA regarding pathogenic activity in groundwater, leads me to suspect that such a public health risk may exist here. The fact that the Mission Bay Landfill is on the 303 (d) list of impaired water bodies for fecal coliform is the first indication that the landfill may pose an additional threat to the public which the Committee was not aware. Fecal coliform is merely an indicator microbe to detect the presence of sewage in water. If fecal coliform is present, then the entire host of other microbes including pathogenic bacteria, viruses and protozoa, are also present.

Another indication of a potential pathogenic presence within the landfill is the interconnection between Mission Bay and the landfill AND the San Diego River. It seems from several photos and drawings that, at a minimum, there are several former tidal creeks that existed within the landfill boundaries prior to dumping. The Site Assessment Report identified several areas of total saturation within the landfill bottom. The brackish water in these areas also rose and fell with the tides and the underlying hydrology is influenced by flooding from the San Diego River.

Furthermore, the Report reported the likelihood of a bacterial existence within the landfill by observing the continued production of methane and hydrogen sulfide gases. At this late date in the life of this landfill, the strong production of gases should be unusual. The strongest indication is that the highest generation of landfill gases detected by this study was in the areas of total saturation of the landfill bottom, where the greatest communication between Mission Bay and the landfill groundwater exists. The production of “daughter” products of other long-chain chlorinated methanes is another sign of microbial activity.

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Normally, one of the most common and accepted methods of remediating hazardous waste landfill sites containing organic compounds is to use bacteria to break them down. Pathogens can break these down just as easily and produce the same daughter products and gases. The conditions that make this landfill so susceptible to an invasion of pathogenic microbes is because it is hydraulically connected to an impaired water body that supplies a fresh “dose” of bacteria daily to the subsurface hydrology of the landfill. This almost assures this reviewer that the microbial activity mentioned by the Consultant in this Assessment Report is pathogenic in nature, and could be far worse.

It is understood amongst the scientific community that viruses attach themselves to bacteria, or actually invade their outer shell and “hide” from detection. These are known as bacteriophage microbes. The insidious part of this phenomenon is that once the virus attaches itself to the bacteria of choice, it “convinces” the bacteria to reproduce strands of viral DNA and then extrude them from the bacteria. Some researchers have noticed millions of viruses produced through one E. Coli bacteria. The bacteria then implode or die, but in essence, are no longer detectable in water. There are very few, if any,

detection methods for viruses in groundwater. The EPA estimates that over 40% of all water-borne illnesses in the US occur without ever finding the source of the outbreak.

It is also understood, to some extent that bacteria metabolize by “eating” metal ions. The depletion of metallic species at the outer edge of the landfill could be another sign of pathogenic bacterial activity within the landfill.

To make matters worse, groundwater sampling and analysis for pathogens in water (assuming there is a readily attainable process to detect them) may not be a useful indicator of their presence/absence because they tend to form bio-films on metal objects and around sand grains. So, landfill trash, or subsurface soil samples would have to be collected in order to determine if there is a bio-film and then tested to determine if it contains pathogenic microorganisms.

Of course, this may all be a moot point if the recommendation of the Consultant and the Committee is to incinerate the entire volume of waste and the surrounding soils. But until the Committee decides on a method for cleanup, the water quality of Mission Bay will continue to degrade as a result of a potential “incubator” under the landfill.

This is not the end of the story (Sorry to say). The EPA is now engaged in very serious study of other compounds that have a very questionable affect on the environment and public health, but one that presents very serious implications for the health of the public. In every sewer release, it is now understood that among the bacteria, viruses, protozoa, and other unmentionables, in sewage, there also exist Pharmaceuticals and Personal Care Products (PCPPs). The EPA National Environmental Chemistry Laboratory is researching the health affects of the most common of these compounds such as steroids, hormones, antibiotics, antivirals and a host of other medications (for example, that which is used to treat muscular dystrophy). These compounds are entering into the surface water, and now in the case of Atlanta, Milwaukee and Chicago, the groundwater. None of these compounds can be treated in drinking water facilities once they are discharged from the wastewater facilities into the surface water supplies. In the case of Mission Bay, which is not a drinking water supply source, they enter into the environment with the fecal coliform and other unmentionables and move with the pathogens. The exact fate in open water and in the heat is unknown. Studies have shown them to be persistent in the streams and rivers in more rainy environments, such as Atlanta. The point is, PCPPs are released with the bacteria into the surface water and migrate with them.

My recommendation to the Committee is to continue to focus on the hazardous materials and decide quickly what method of remediation is to be performed to eradicate the hazardous waste. Studies can be done on the bacterial component while the other phases of the Committee’s work are completed, if so desired. Also, it is imperative that the City of San Diego eliminate any residual sanitary sewer overflows and to begin to get a handle on stormwater discharges, which can carry other pathogens such as bird flu and other animal-borne viruses.

I have references for all statements made in this letter. If the Committee wants to know more about this, I can be contacted at 404-447-8982, or by email at [gawatershed@msn.com](mailto:gawatershed@msn.com).

Thank you again for the privilege of serving on this Committee. I hope that more time will be granted in order to complete the evaluation. The work that has been done here is very important and will serve as a model in other parts of the country (like Georgia!)

Sincerely,

Chuck Budinger, PG  
Georgia Watershed Alliance



*Chuck Budinger, PG*

1. Mr. Budinger raises the issue of pathogens in the landfill being a potential human health risk, and notes that pathogens were not addressed in the Site Assessment or Human Health Risk Assessment.

In general human pathogens within a landfill are not believed to be a significant health or environmental issue, especially in older landfills. The primary reasons are that: a) there are only limited potential sources for human pathogens to enter a landfill; b) the conditions within a landfill are very different from those within the human body, and most pathogens are “host-specific”, i.e., they do not survive well outside of the human body, therefore perish in the landfill; and c) there are no clear pathways for pathogens, once in a landfill, to be exposed to the human population.

- Human pathogens can and do enter landfills through human waste products, such as in disposed diapers, medical waste, partially consumed food, or more likely, municipal sewage sludge. This constitutes a very small part of the landfill mass.
- Any pathogens that entered the landfill during its active live (40 years ago) would almost certainly be dead. Literature suggests 99.9% pathogen destruction within days of refuse placement in the un-human-like conditions within the landfill. This is because of the “host-specific” nature of pathogenic microorganisms.
- Yes, the landfill has a great mass of bacteria, but so does normal soil, as well as surface and ground water. These bacteria are rarely pathogenic in and of themselves.
- The methanogenic bacteria in the landfill (which produce the methane) are not pathogenic.
- It is unlikely that the bay is a source by which pathogens enter the landfill – pathogens entering sea water (from surface runoff or untreated sewage) would not survive long and the migration of water through the MBLF is generally toward the bay.
- Pathogens that somehow survive within the landfill are not a threat to the population or the environment. Pathogens typically are affixed to a host and move only when the host moves. They have no mechanism for leaving the site by the air pathway, and it is unlikely they could exist in the cover soils (and be potentially ingested).

2. In addition Mr Budinger addresses “strong production” of methane in the landfill. The rate of generation of gas in the landfill should not be characterized as “strong production”. SCS applied the EPA standard landfill gas generation model to the MBLF, and estimated that the site is generating about 100 standard cubic feet per minute, about 10% of the amount generated at site closure in 1960. Based on commonly utilized generation models, landfill gas generation declines asymptotically over the years, i.e., it theoretically never reaches “zero”. The EPA-sanctioned model used in this report is consistent with this. Despite the low generation, it is not uncommon to see high concentrations of methane both in the landfill and possibly in surrounding native soils (to a limited distance).

## DRAFT REPORT : MISSION BAY LANDFILL SITE ASSESSMENT

Suggested changes in sequence of report sections J. Swink:

1.0 [no change] SCOPE OF WORK

[new 2.0] Old 5.0 HISTORICAL REVIEW (PHYSICAL CHARACTERISTICS)

[new 3.0] Old 7.0 SITE CONCEPTUAL MODEL

Section 7.1.2 [pp. 113-114]: Summary of Landfill History - could be condensed substantially, with a See reference to the more detailed historical background in Section 2.0[old 5.0] : Historical Review (Physical Characteristics).

Sec. 7.1.2.1: Historical Conditions is good as a first paragraph.

Sec. 7.1.2.2 : Landfill Construction, para. 2 could be a second paragraph under 7.1.2 [deleting ref. to 7.1.2.1 & 7.1.2.2], with remaining verbiage from 7.1.2.2 being incorporated into "New" Section 2.0 as appropriate.

[new 4.0] Old 2.0 SITE ASSESSMENT REPORT COMPONENTS

Various sub- section headings in old 2.0 must also be revised to reflect changes in the parenthetical referrals to other sections

[new 5.0] Old 3.0 TECHNICAL BACKGROUND

[new 6.0] Old 4.0 FIELDWORK

[new 7.0] Old 6.0 SITE ASSESSMENT FINDINGS

8.0 [no change] HEALTH RISK ASSESSMENT

9.0 [no change] ECOLOGICAL RISK ASSESSMENT

??10.0 [delete section, fold content into report elsewhere?] CONCLUSIONS -- does not state conclusions but summarizes work plan details from preceding sections. "Conclusions" should summarize the findings, not restate the Scope of Work. Much or all of this material could be incorporated into the Executive Summary or the section: SITE ASSESSMENT FINDINGS, with See references for each sub-section where sub-section content is not incorporated into the SITE ASSESSMENT FINDINGS.

11.0 [no change] RECOMMENDATIONS

12.0 [no change] SELECTED REFERENCES

13.0 [no change] ACRONYMS AND ABBREVIATIONS

*Judy Swink, Mission Bay Park Committee*

One comment by Judy Swink has not appeared in writing. At the November 18, 2005 TAC meeting, Ms. Swink objected to the mention on p. 108 of the need for increased circulation of water in the channel north of the landfill area. She said that the circulation problem has been carefully looked at by various people, and that there is no easy solution (such as repair the culverts under the road). The TAC agreed that we should just delete the offending sentence about increased circulation.

In addition Ms. Swink provided a suggested revised order for the sections of the report by email on November 8, 2005, and at the TAC meeting on December 9, 2005. Much discussion ensued and a revised order was agreed upon by those present. The major revision involves moving the former Section 5 (Historical review) forward to become Section 3 in the final report and moving the former Sections 3 and 4 to become Sections 4 and 5.



**San Diego Coastkeeper  
Mission Bay Technical Advisory Committee  
Draft final report comments  
Prepared by Hiram Sarabia**

The following comments and suggested corrections regarding the Environmental Site Assessment of the Mission Bay Landfill report are submitted on behalf of the San Diego Coastkeeper (formerly the San Diego Baykeeper) by Hiram Sarabia (Technical Advisor).

1. - If any reasonably reliable historical documents indicating the possible contents of the landfill were found I request that they be included in the appendix section of the report and that they be mentioned and referenced in the introduction.
2. - Please list out "phthalate compounds" mentioned in the third paragraph of page one. If these are too numerous to list in the text leave as is but include a reference to where in the report that list may be found.
3. - In the last paragraph of page two, Please list the Mission Bay Watershed Evaluation Study and the Mission Bay Citizen Watershed Monitoring and Education Project as projects conducted by the University of San Diego in partnership with the San Diego Coastkeeper.
4. - Include a table summarizing applicable soil, sediment (if available) and water quality standards for soil, sediment, ground water, etc, with references.
5. - In section 2.1.1, it is mentioned that historical data that were "properly collected and analyzed" were used in this report. Please list the criteria that you employed to select those data.
6. - Please include a statement as to why a Quality Assurance Project Plan was not prepared for this project. If such a document is available please include it in the appendix section.
7. - Please list the Data Quality Objectives that were adopted as part of this project.
8. - Please include a summary of quality control results and any problems encountered during this study.
9. - On the second paragraph of page 18, it states "fieldwork generally followed the protocols established by....Site Assessment and Mitigation (SAM) Manual". What do you mean by "generally", were there exceptions or modifications to this protocol? Please state any changes here.
9. - Identify certified laboratories by name and provide license numbers



10. - On Page 62, it states that results for compounds like benzene and hexavalent chromium in samples were below detection limit. Please explain why you choose these analytical methods, when there are much more sensitive methods. For example, both EPA method 502.2 and 542.2 have method detection levels below 0.05-ug/l for volatile organic compounds and EPA 1636 has a method detection level of 0.23-ug/l for hexavalent chromium.
11. - On fourth paragraph of page 64, please indicate the water depth, if applicable, and depth of coring for the sediment samples collected.
12. - Please include a section on calibration of instruments used in environmental field measurements and include copies of calibration records in appendix section.
13. - In the description of sampling methods please include information on the number of field replicate samples collected.
14. - Was a power analysis conducted as part of the study design and if so please provide the results in the appendix section.
15. - Please describe the sampling design employed, where sampling sites selected randomly?
16. - Where any concentration contour maps generated for metals or other COPC?
17. - Please describe how the "interpreted former location of San Diego river" was delineated.

#### Suggestions for Future Studies:

- Conduct an evaluation of contaminants present in the sediments of the south shores portion of Mission Bay, using the analytical data presented in this report as a guide for choosing parameters to be measured. Collect samples within the delineated area of the interpreted former location of San Diego River and along the central part of the channel south shores channel.
- Include the California Least Tern as an ecological receptor, and other appropriate sensitive vertebrate and invertebrate species, in the tier 2 ERA.

*Hiram Sarabia, San Diego Coastkeeper*

1. The historical documents from the TAC website will be included in the final report as Appendix 3.1.
2. The two phthalates compounds listed in the master data compilation table are bis(2-ethylhexyl)phthalate and di-n-butylphthalate.
3. These two projects will be listed as requested.
4. The ARARs are discussed in Section 1.6 and the numerical values are provided in Tables 4.12 through 4.24 for comparison with each type of data. References are provided in the footnotes to each table. We have not compiled all these numbers into one table as it would involve a lot of different chemicals, but we could do so if you still feel it is necessary.
5. The review process used for the previous data was described in the workplan as follows:

### **2.3 Existing Data Review**

A review and critique of the existing data set was conducted to assess the reliability/usability of the data set. Ten criteria were considered and a determination made as to the reliability of the sample results based on the following:

- 1) if the sampling protocol was available;
- 2) if there was an acceptable description of the sampling protocol;
- 3) if proper sample preservation was followed and proper sampling containers were used;
- 4) if laboratory data sheets were available;
- 5) if laboratory quality assurance/quality control (QA/QC) was available;
- 6) if the QA/QC data was dependable;
- 7) if the sample locations are provided on a Site plan and able to be accurately duplicated;
- 8) if a sample represents one sample location (versus several sample locations, as in a composite sample);
- 9) if the sample was analyzed by a state-accredited laboratory; and
- 10) if the data was collected by "field-screening" (versus laboratory analysis).

Based on these ten criteria, each sample result was placed into a category identifying it as reliable, acceptable, or unreliable. For a sample result to be considered reliable, the first nine criteria listed must be met. For a sample to be considered acceptable, some of the criteria may not have been met. For example, LFG samples were collected on the landfill, but the depth of where the samples were collected within the gas wells was not provided. Because the data set is



limited and some of the criteria listed were met (e.g., sampling procedures, etc), this data was considered acceptable. Data deemed unreliable typically did not meet several of the criteria and have not been considered in this scope of work.

The following sections provide a critique of the data which we believe to be “reliable” or “acceptable.” In the cases where acceptable data is presented, the data are only used qualitatively. Rejected data are termed “unreliable.”

6. A Quality Assurance Project Plan was not prepared for this project because it was not in the original scope, nor required by the agencies which reviewed and approved the workplan. We followed an informal QAPP process in the preparation of the workplan in order to select the appropriate analytical methods for the risk assessment and for the ARARs that we considered appropriate for the project. In addition, a formal QAPP is an expensive document to produce, and we considered it more useful to spend the limited available budget on collecting and analyzing more samples.
7. Again, formal DQOs were not prepared, but we reviewed the available methods and the detection limits that were needed for the risk assessment and ARARs, as well as the need to find appropriate analysis for metals in brackish water.
8. This is included in the new Appendix 4.22.
9.
  - a) The word “generally” is commonly used in reports because of the complexity of many protocols and is not intended to imply that the protocols were not followed. It is our understanding that no specific exceptions or modifications were made to field protocols during this study.
  - b) These are included in Appendix 4.22.
10. This issue is discussed in Appendix 4.22.
11. Sediment samples were collected from depths of approximately 0 to 6 inches, i.e. immediately below the surface.
12. These are included in Appendix 4.23. We are researching the calibration records for two of the rental instruments used and will provide these documents in this appendix to the final report.
13. This is discussed in the report in section 4.2.1.1 in the draft report.
14. No, a power analysis was not conducted as part of the study design.
15. The landfill gas sampling was conducted using a grid system with random sampling within the grid squares. Other sample locations were selected based on

either professional judgment resulting from historical research (e.g., location of a well at each end of the former location of the river channel), previous sampling locations used (e.g., sediment samples), or to fill in obvious data gaps (e.g., several soil boring locations).

16. No, because no patterns were observed in the data that were suitable for contouring. We would like to know if there is a particular CoC for which you were interested in contours, and in which medium.
17. The location of the main channel of the San Diego River is shown on several maps of the area which are referenced in section 3.1.1. The location of the former San Diego River channel shown on the figures in this report is based on the 1950s aerial photographs obtained from the City of San Diego and the San Diego Historical Society, many of which are included in Appendix C. Aerial photographs from 1951 and 1952 show the location of the former San Diego River channel shortly after the completion of the new channel and levees, but prior to the start of landfill operations. Aerial photographs from late 1953 show that much of the former channel had been filled during expansion of the landfill.

The figures in the draft report show the location of the former San Diego River channel as interpreted from the pre-1952 aerial photographs and maps. Although the former channel appears different in the various photographs, mainly due to changes in the amount of water present in the channel, the general location of the channel remains the same on all the photographs. The figures show the maximum width of the former channel seen on the aerial photographs, although the channel was probably full of water only during high tides. Historical maps, such as the 1859 map issued by the U. S. Coast Survey, show that the former San Diego River channel was in the same general location as observed in the later aerial photographs.

Suggestions for Future Studies: These are both interesting suggestions, but we feel that it is more appropriate for the TAC and the City to respond to them.

# Memo

**To:** Ray Purtee, City of San Diego ESD  
**cc:** Mission Bay Landfill Technical Advisory Committee (TAC)  
**Date:** 11-21-2005  
**Re:** Draft Site Assessment Report for Mission Bay Landfill

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Since attending my first Mission Bay Landfill TAC meeting in June 2003, I have been impressed by the energy and dedication to purpose that each TAC member has displayed. As a Clairemont resident, I feel like my interests are well represented by the oversight that the TAC provides for this project. I have been especially impressed by Ms. Frye's ability to balance the needs of City government, of local Clairemont and Mission Bay residents, and of various community interest groups (e.g., Mission Bay Park Toxic Cleanup) so that all relevant voices have a chance to be heard. Especially relevant, I believe, has been the input by OBGO and Coastkeeper concerning 'big picture' issues having to do with the landfill's historic boundaries, questions related to water and sediment quality to the north of the former MBLF, and the study's overall quality objectives. Technical issues raised repeatedly over the past 12-18 months by Dr. Huntley and Mr. Pulver related to groundwater measurements and field practices appear to be helping the City's consultant focus on producing a final Report that is complete and of acceptable quality.

I have listened with interest to the discussions and summary comments at the last several TAC meetings and have read with keen attention the formal letters provided by Dr. Gordon, Dr. Huntley, Mr. Pulver, and Mr. Sarabia. I certainly agree with these experts that a comprehensive Executive Summary should be added to the Report and I also agree that a number of underlying "data quality" issues must be specifically addressed in detail prior to finalizing the draft Report. In reviewing my own notes of past TAC meetings since 2003, I realize that Mr. Pulver did not join the committee until April 2004, at which time the consultant's work plan was almost complete. Further, when Mr. Sarabia began attending the TAC meetings in January 2005, the consultant's field work was complete (or nearly so). I suspect that this chain of events is largely responsible for the possible omission from the work plan of a "quality assurance plan" and of written "data quality objectives." Never the less, I agree with Mr. Sarabia's points #6 and #7 and similar points made by Mr. Pulver that the consultant's report should discuss in much greater detail these apparent omissions and should explain how their absence affects the findings of this study. As a City resident, I am certainly hopeful that the omission of these quality assurance elements will in no way imperil the validity of the findings provided in the draft Report.

At a much more fundamental level, Dr. Huntley's written comments #3 and #4 nicely summarize the present difficulties with what I believe are the single most important portions of the consultant's findings – a meaningful and thorough discussion of “hotbutton” issues” and “big questions.” I agree completely with the spirit of Dr. Huntley's review comment, namely that the consultant's final Report must clearly and completely address both the “hotbutton” issues” and the “big questions” that he points to and must discuss in detail an answer to the question of “where did all the chemicals go?” If the final Report does not do so, then the City will have failed in its most basic goal – to determine once and for all whether the former MBLF site poses a significant threat to users of Mission Bay and to then communicate those facts to City residents in a way that is unambiguous and defensible.

To this latter question (i.e., of defensibility), I am particularly troubled by the concerns raised about data quality issues and about the draft Report's completeness. Since the draft Report concludes that minimal health or ecological risks exist at the MBLF site, and since this finding is so unexpected (from this layman's perspective, at any rate), I am honestly concerned that technical inadequacies raised by expert TAC members will result in the final Report's conclusions being disregarded at some point in the future by other interested parties. That is the bad news. The good news is that the four reviewers listed above have already submitted written comments that clearly point the way for the City's consultant to address the deficiencies present in the draft Report. As a City taxpayer and nearby neighborhood resident, I urge City ESD staff to carefully monitor revisions to the draft Report so that all of the expert TAC members' comments and concerns are fully and completely addressed in the final Report.

During the coming holiday season in November and December and well into the new year, my personal schedule will not permit me to attend TAC meetings with the regularity that I have enjoyed during the past 2½ years. By the time that I can again resume attendance at the TAC meetings, I suspect that the final Report will already have been issued. Should you or other ESD staff wish clarification or elaboration for any of these points, you should feel free to contact me at [fields\\_family77@sbcglobal.net](mailto:fields_family77@sbcglobal.net) or by mail at the address below.

Thank you again for your conscientious efforts as the MBLF project manager. I look forward to reading the results of your efforts when the study's final Report is issued.

Respectfully,

John and Diantha Fields  
3233 Karok Avenue  
San Diego, CA 92117

*John and Diantha Fields*

We appreciate your comments and think that they have been answered in our responses listed under the names of Dr. Huntley, Dr. Gordon, Mr. Pulver, and Mr. Sarabia. Your astute observations in the second paragraph regarding the history of the TAC and its personnel were most helpful in understanding of the development of various issues. We are grateful for your contribution.

**Mission Bay Park Toxic Cleanup  
P.O. Box 122807  
San Diego, CA 92112-2807**

Chair Donna Frye  
Mission Bay Landfill  
Technical Advisory Committee  
202 C Street  
San Diego, CA 92101

**FOR DISTRIBUTION**  
January 30, 2006

**Subject: Comment Letter - Mission Bay Landfill Site Assessment Report**

The City of San Diego's military toxic waste dump in the South Shores of Mission Bay Park was an unfenced, unlined, and unregulated toxic recipient of millions of gallons of toxic waste in the 1940's and 1950's. For years, it was the city's only operating Class 1 dump for toxics.

Past officials denied the toxic dump's existence. Current officials chairing and running the TAC, and supervising the site, contradict evidence the unlined site leaks through every pathway, and deny the relevance of its history of releases.

**SCS Engineers' site study is fatally flawed -- it ignores scientific protocols at every level.**

Its failures, from ill-conceived planning to faulty implementation, leave the public exposed to high risk from the dump's contaminated cap, soil, plumes, gas pockets, and unimpeded releases.

The study also failed to address the bio-accumulation of heavy metals and pesticides in Mission Bay and San Diego River fish and invertebrates. This is a serious health threat to both the humans and park endangered species that ingest them.

City records, historical aerial photo banks, and scientific studies submitted to TAC evidence unrestricted barrel- and surface-dumping throughout South Shores. Knowing this, City and SCS staff arbitrarily limited toxic tests to the "map" of an old garbage landfill. This violates the Technical Advisory Committee mission statement to find the "horizontal extent" of toxins.

To date, SCS has refused to produce an executive summary. After months of TAC member requests, SCS submitted two pages of pull quotes from the draft as their executive summary. This is bad science.

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The following study comments must be considered preliminary until the stated conclusions of an executive summary are provided to TAC members:

- 1) Soon after getting the contract, SCS canceled all promised trenching, which precluded exposing hazardous sewage ponds revealed in aerial photos and city documents. SCS announced they were reducing push probe tests by 40%, and "unable to test" half bay sediment sites as well as an area near the river with extreme background levels.
- 2) SCS and the City site supervisors running TAC refused to contact for interview the responsible parties who dumped toxic waste -- Solar, Convair, Ryan, Rohr, and the U.S. Navy among many others. Scientific investigators always start a site assessment by contacting the corporations who dumped the toxics. TAC members, tasked with protecting the lives and health of thousands of parkgoers, still have little idea who dumped how much of what, when and where.
- 3) Forsaking scientific method, SCS shunned mandates to test to standards, provide split samples, repeat sampling to verify results, use new tubes to avoid contamination anomalies, or adjust results to twice daily tidal flushing. Air sampling, in a dump known to produce gases, was totally deficient in method and extent.
- 4) Drastically limiting accurate assessment of site toxins, and repeating the flawed Woodward Clyde mistake, SCS refused to test near high magnetometer reading locations.
- 5) Departing from scientific protocol, SCS Engineers canceled a promised Quality Assurance Program (QAP) requested by Baykeeper.
- 6) SCS and City TAC staff passed over requests to agendize the Environmental Protection Agency Site Assessment, a more current, accurate evaluation than the Woodward Clyde study data rehashed by SCS to the exclusion of numerous available area tests.
- 7) Re the human health risk assessment, SCS found that cancer and non-cancer risk drivers arsenic and mercury are at "high" and "very high" soil levels, exceeding from 200% to 400 % the safe hazard quotient of 1. Vanadium is elevated. SCS refuses to say if these levels are safe for human exposure, especially in children. The City and SeaWorld are building public use facilities in the area to attract people. Their expert, SCS, refuses to declare any public risk from a site where the cap is contaminated, chemical plumes are common, and large gas pockets are produced.
- 9) SCS and the City refused to fence the site, even when the cap was penetrated during testing, and refused to post a Prop 65 warning for the carcinogens listed in the Woodward Clyde study.
- 10) For five months, SCS and City TAC staff deliberately chose to withhold from TAC members letters from two state of California regulatory agencies. The letters were critical of SCS's scope and methods. SCS failed to implement the full recommendations of OEHHA and the CRWQCB. For instance, rather than test southeast Fiesta Is. for background levels, the City chose to establish none. During the five month coverup, SCS did their tests and SeaWorld began a major expansion.
- 11) The SCS report lacks a complete list of sampling, testing, and lab personnel, and their qualifications and experience.



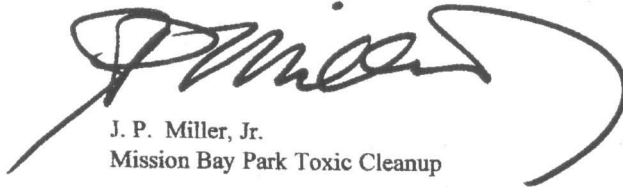
- 12) SCS failed to retest documented plume and gas hotspots outside the landfill map under the SeaWorld leasehold. City TAC staff then asked TAC to endorse SeaWorld mitigation projects outside TAC purview.
- 13) SCS virtually ignored the SAJC study, which established dump releases as the source of bay sediment contamination, and detailed extremely high levels of heavy metal releases.
- 14) SCS and city staff refused to review documents pertaining to the site's history, even though the city's paid document researcher collected an 88-page index re this site.
- 15) SCS paid no heed to calls for the document researcher to present a report.
- 16) SCS was deaf to calls from a host of environmental groups to determine the true horizontal extent of the dump, namely that portion beneath SeaWorld, where photos, studies, eye witnesses, and documents prove the existence of sewage waste, toxic plumes, and deadly and explosive Hydrogen Sulfide and Methane gas.
- 17) The Mission Bay Landfill, if it were just an illegally-unlined garbage dump, presents possible bacterial and viral health threats, as TAC member Budinger notes. By ignoring unposted toxic Thallium releases, garbage seepage, and human health complaints from area triathletes, the SCS study fails to adequately test surface waters.
- 18) The chair requested that MBPTC provide data on the dump, then joined SCS in *rejecting* the alarming professional scientific studies done by Targee Environmental Inc, and SWAPE LLC, as submitted by California Earth Corps and the Sierra Club.
- 19) SCS declined to interview a dump site supervisor, who stated on video that "everybody, including the Navy, dumped everything everywhere in South Shores". This honored retiree also rescued a young girl caught in a sewage pond under where SeaWorld sits.
- 20) SCS and City staff failed to notice the study to recreational stakeholder user groups and area residents. Kept off the committee were County Health, Park and Rec., US Fish and Wildlife, Fish and Game, and the Coast Guard.
- 21) SCS neglected to test this site -- long known to be a military toxic waste dump -- for radioactivity.
- 22) As a nursery for the sport fishing industry, Mission Bay is dying. SCS did no bioassay of bordering water bodies -- not in Mission Bay or the San Diego River.
- 23) Despite a budget of \$650,000, SCS refused to computer map known plumes, airborne exposure outside of the city landfill map, or two dump flooding episodes.
- 24) SCS did no public health survey of the reported cancer cluster downwind in Bay Park.
- 25) In violation of the Precautionary Principle, instead of testing for all of the EPA Site Assessment's sixty-eight site Priority Pollutants, SCS and City Environmental Services staff restricted their study to a short list of COPCs.

- 27) SCS made little or no effort to examine degradation rates, discuss other studies, reconcile estimates, establish release source hotspots, detail clean up options, provide park land use guidelines, retest release sites, or acknowledge the risk to people of millions of gallons of toxics never remediated.
- 28) SCS refused to provide TAC with a requested list of applicable toxic standards, or to address the city and water board's failure to require any health and regulatory standards in the site monitoring program.
- 29) SCS ignored TAC staffer John Lamb's three part Union Tribune investigative report on the dump, as well as the San Diego Reader's cover story "Something Stinks in Mission Bay."
- 30) SCS refused to study the marine food exposure pathway in the human health risk assessment.
- 31) The chair and SCS refuse to discuss the tier two study both have mentioned.

The gross deficiencies and bad science detailed herein leave unprotected park visitors, employees, and neighboring residents. The study in no way elucidates the true threat of the next release from the Mission Bay dump.

TAC members, responsible for human health and safety, should not sanction this substandard study of a toxic time bomb.

Sincerely,



J. P. Miller, Jr.  
Mission Bay Park Toxic Cleanup

cc: John Robertus, CRWQCB  
City Attorney's Office

*James Miller, Jr., Mission Bay Park Toxic Cleanup*

- A. We do not agree with your assessment of our study, which was conducted in a scientific and professional manner.
  - B. The bio-accumulation of heavy metals and pesticides in Mission bay and San Diego River fish and invertebrates was outside the scope of our contract.
  - C. SCS conducted the study within the guidelines we were provided. The substantial review of photographs, maps and other historical documents was not restricted to the limits of the sanitary landfill and information on other areas in the vicinity was considered as discussed in Section 5 of the draft report.
  - D. SCS provided a draft executive summary on December 9, 2005, almost two months before this comment letter was written. The executive summary will be revised as discussed in the cover letter. However, it is a summary of the report and will not include information that is not discussed in other parts of the report.
1. During the interview, we were requested by TAC members not to conduct trenching at the site due to events during the building of the boat basin. Additional "direct push" soil borings, not proposed in the workplan, were installed in the landfill as a result of discussions at technical subcommittee meetings. The bay sediment sites were not sampled because true background samples are not present in the area. SCS elected to use the more conservative approach of not comparing samples to background, but analyzing all the data.
  2. Interviews of such entities were not part of the scope of our study.
  3. SCS has no record of verbal requests in our TAC meeting notes, nor did we receive any written requests for split samples. We analyzed samples and compared to standards as discussed in the report, and used standard procedures for sampling to avoid cross-contamination of samples. We do not agree that our landfill gas, and other air, sampling was deficient.
  4. Soil boring B14 was installed near an area of higher magnetometer readings.
  5. The QAP was requested by Coastkeeper personnel after the fieldwork had been completed. As previously discussed, appropriate procedures were followed to obtain reliable data.
  6. Setting the agenda of TAC meetings is not within the scope of our study.
  7. The HRA did indeed find that arsenic concentrations in soils of the landfill contribute excess cancer risk to potential users of the site. However, because the arsenic concentrations are mostly within the range of typical background

concentrations of arsenic in California these risks are within the range of risks most people experience naturally throughout California. The California Environmental Protection Agency does not require remediation of naturally occurring chemicals below background. Nonetheless, it is always desirable to reduce exposure to cancer-causing chemicals to the extent feasible and arsenic exposure at the landfill could be reduced further by capping the site with cleaner soil or excavating and removing soils containing higher concentrations. Mercury concentrations were very high in a few locations in very deep soils which only construction workers would be exposed to so these concentrations would not pose a risk to casual users of the area. The HRA also noted the high concentrations of methane gas in the landfill, pointing out that these levels exceed safe building standards. Finally, the HRA also pointed out that although hydrogen sulfide was found only at low concentrations in the landfill gas and would not pose a hazard to casual visitors to the site, it is possible that pockets of high concentrations exist deeper in the landfill. Opening of these areas during construction may create a health hazard to construction workers. These health risk conclusions are clearly stated in Sections 8.6.1, 8.6.2, 8.6.3, and 8.6.3 of the Draft HRA.

8. There is no #8 comment in the letter we received.
9. Fencing of the site, which is a public park, is the purview of the City, and would probably require a land use change. Appropriate steps were taken to protect health and safety during the study, as discussed in the health and safety plans.
10. SCS included the recommendations of the reviewing agencies in the assessment, as appropriate. The lack of background samples is addressed in our response to Mr. Miller's comment #1.
11. A table of SCS personnel has been included as an attachment to this document.
12. Retesting of former sampling locations was not included in our scope. The issue of high concentrations in the Sea World parking lot is addressed in our response to Dr. Huntley's comment #6.
13. SCS reviewed the SAIC study during the review of historical documents, and had internal discussions regarding the chemicals reported.
14. We do not recall refusing to review any documents regarding the site. Please be more specific.
15. The report of the document research is provided in the workplan, and much of it is repeated in the report and its appendices.
16. The response to this comment is the same as that to Mr. Miller's comment #C.

17. Sampling and analysis of surface waters were not included in this study because there are many possible sources of contamination in surface waters. This study was specifically designed to address the contribution of the landfill. The issue of elevated thallium concentrations has been addressed in an attachment to this document.
18. SCS attended the meeting at which these studies were presented, and discussed the data with the presenters. SCS obtained copies of the photographs presented at this TAC meeting for further study. These reports were considered in preparation of Section 5 in the Draft Report.
19. Interviews of such personnel were not part of the scope of our study.
20. The general public and all potentially interested parties would have been aware of the study due to the attendant publicity. In addition, two large signs were posted at the park, one close to the entrance from Sea World Drive, and one near the boat basin ramp. The meetings of the TAC are open to the public, and we are not aware that anyone was specifically excluded from membership of the TAC.
21. The suggested testing is outside the scope of the current study. The TAC could discuss whether such a future study is warranted.
22. The suggested bioassays are outside the scope of the current study. See the response to comment #17.
23. The groundwater analytical data were not appropriate for contouring. Maps were generated on groundwater elevations before, during, and after the flood events. Airborne exposure outside the landfill was studied by the APCD, and their report is included as an Appendix to the draft report.
24. The work is outside the scope of the current study.
25. The list of analytes tested was based on our review of historical data for the site.
26. There is no #26 comment in the letter we received.
27. Degradation rates are discussed in our response to Dr. Huntley's comment #4. Other relevant studies were reviewed prior to preparation of the workplan. Recommendations have been made to address issues that we found during our study. Retesting of locations was not included in our budget.
28. The applicable standards are discussed in the report (section 1.6) and provided in Table 4.12 to 4.24. Additional standards were added for comparison purposes at the request of the TAC. Addressing health standards in the site monitoring program is not in the scope of our contract.

- 29. This article was included in the review of historical data.
- 30. The marine pathways would be included in a Tier 2 study if conducted.
- 31. SCS is willing to conduct a Tier 2 study if requested to do so by the City.